



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,634	06/04/2002	Larry Rushefsky	IO-1013US	8725
24923	7590	03/13/2006	EXAMINER BELLAMY, TAMIKO D	
PAUL S MADAN MADAN, MOSSMAN & SRIRAM, PC 2603 AUGUSTA, SUITE 700 HOUSTON, TX 77057-1130			ART UNIT 2856	PAPER NUMBER

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/936,634

Applicant(s)

RUSHEFSKY ET AL.

Examiner

Tamiko D. Bellamy

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36 and 38-45 is/are allowed.
- 6) ☒ Claim(s) 9-14, 17, 19-23, 26 and 27 is/are rejected.
- 7) ☒ Claim(s) 18, 24, 25 and 28-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a **control circuit coupled to the housing for controlling the sensor module (See fig. 2)** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2856

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The words “a housing for receiving **a sensor**” are vague and unclear. Line 8 of claim 9, discloses “**a sensor module** within the housing including **a plurality of sensor packages**”. It is unclear as to whether the housing of the sensor module is **a second housing** for encasing the sensor module and which in turn is placed inside of a first housing. (See Fig. 2).

Claim Objections

4. Claim 14 is objected to because of the following informalities:

a. Line 1, insert after the word “wherein”, to –each of--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9-14, 17, 19-23, 26, and 27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirose et al. (5,898,218) in view of Saito et al. (JP05072227A).

Re claim 9, as depicted in figs 2, 4, and 5, Hirose et al. discloses a housing (e.g., ceramic package having a cavity (5) for receiving a sensor (acceleration sensor chip 6).

Art Unit: 2856

As depicted in figs. 2 and 4, Hirose et al. discloses the housing (e.g., ceramic package includes one or more parallel planar surfaces, a bottom surface of the cavity, a top exterior surface, one or more side surfaces, one or more bond pads (e.g., die bond material 20) on one of the parallel planar surfaces. As depicted in fig. 4, Hirose et al. discloses the housing includes one or more bond pads on the bottom exterior surface, the top exterior surface, and the side surfaces. Hirose et al. discloses a housing (e.g. ceramic package (4) including ceramic sheets (10-10e)), and a sensor module (e.g., acceleration sensor module 1) coupled to a substrate (e.g., printed circuit 2). Hirose et al. discloses a control circuit (e.g., IC controlling circuit 8) coupled to the housing (e.g., ceramic package 4). **Hirose et al. lacks the detail of the sensor module having a plurality of sensor packages, and each sensor package having an axis of sensitivity positioned in a different spatial direction.** As depicted in fig. 1, Saito et al. discloses a sensor module within a housing (e.g., case 6) including a plurality of sensor packages (e.g., acceleration detecting elements 2) having an axis of sensitivity positioned in a different spatial direction. Therefore, to modify Hirose et al. by employing a sensor module with a plurality of sensor packages would have been obvious to one of ordinary skill in the art at the time of the invention since Saito et al. teaches an acceleration detector having theses design characteristics. The skilled artisan would be motivated to combine the teachings of Hirose et al. and Saito et al. since Hirose et al. states that his invention is applicable to acceleration sensor and Saito et al. is directed to an acceleration detector.

Re claim 10, Hirose et al. discloses that the sensor module (1) comprises at least one micro-machined accelerometer (acceleration sensor chip 6).

Re claim 11, Hirose et al. discloses that the sensor module (1) comprises at least one micro-machined accelerometer (acceleration sensor chip 6). Hirose lacks the detail of the sensor module comprising three micro-machined accelerometers positioned such that the axes of sensitivity are orthogonal to each other. Saito et al discloses a sensor module including a three micro-machined accelerometers (e.g., acceleration detection elements (2) formed by using the micromachining technique). Therefore, to modify Hirose et al. by employing a sensor module with three micro-machined accelerometers would have been obvious to one of ordinary skill in the art at the time of the invention since Saito et al. teaches an acceleration detector having these design characteristics. The skilled artisan would be motivated to combine the teachings of Hirose et al. and Saito et al. since Hirose et al. states that his invention is applicable to acceleration sensor and Saito et al. is directed to an acceleration detector.

Re claim 12, Hirose et al. discloses the control circuit (e.g., controlling IC chip 8), which is equivalent to an application specific integrated circuit.

Re claim 13, as depicted in fig. 4, Hirose discloses a sensor module (1) monolithic package selected from a group of hollow frame.

Re claim 14, Hirose et al. discloses a sensor (e.g., acceleration sensor chip 6)) coupled to the sensor package. Hirose et al. lacks the detail of sensor packages. As depicted in fig. 1, Saito et al. discloses a sensor module within a housing (e.g., case 6) including a plurality of sensor packages (e.g., acceleration detecting elements 2). Therefore, to modify Hirose et al. by employing a sensor module with a plurality of sensor packages would have been obvious to one of ordinary skill in the art at the time of

the invention since Saito et al. teaches an acceleration detector having these design characteristics. The skilled artisan would be motivated to combine the teachings of Hirose et al. and Saito et al. since Hirose et al. states that his invention is applicable to acceleration sensor and Saito et al. is directed to an acceleration detector.

Re claim 17, Hirose et al. discloses the housing (e.g., ceramic package (4)) having resilient couplings with a cross sectional shape that is approximately rectangular.

Re claims 19 and 20, Hirose et al. discloses resilient couplings are positioned at one or more ends of the bottom surface of the cavity.

Re claim 21, Hirose et al. discloses resilient couplings are positioned at the approximate center of the bottom surface of the cavity of the housing.

Re claim 22, Hirose et al. discloses a recess in the bottom surface of the cavity for receiving resilient couplings.

Re claim 23, Hirose et al. discloses resilient couplings are positioned at the approximate center of the recess of bottom surface of the cavity.

Re claim 26, Hirose et al. discloses the sensor (6) includes one bond pad (e.g. die bond material 20) for coupling the sensor (6) to the housing.

Re claim 27, as depicted in fig. 2, Hirose et al. discloses the bond pads (e.g., die bond material 20) have a cross sectional shape selected from a group consisting of approximately rectangular.

Allowable Subject Matter

7. Claims 18, 24, 25, 28-35, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Claims 36, and 38-45 allowed.
9. The following is a statement of reasons for the indication of allowable subject matter:

Re claim 36, the independent claim includes “ dispensing adhesive on the housing, placing the controller onto the adhesive, and encapsulating the controller and the wire bonds with an encapsulant; and curing the encapsulant “ in combination with the remaining claim limitation is not taught and/or made obvious by the prior art. Hirose et al., considered closest to related art discloses a controller (e.g., controlling IC chip 8) **inside of the housing (e.g., ceramic package 4)**. Hirose et al. does not teach dispensing adhesive on the housing, placing the controller onto the adhesive, and encapsulating the controller and the wire bonds with the encapsulant, and curing the encapsulant.

Response to Arguments

10. Applicant's arguments with respect to claims 9-14, 17-36, and 38-45 have been considered but are moot in view of the new ground(s) of rejection. It is the Examiners position that claims 9-14, 17, 19-23, 26, and 27 are not patentable in view of the newly applied art of Hirose et al. (5,898,218) in view of Saito et al. (JP05072227A).


Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (571) 272-2190. The examiner can normally be reached on Monday - Friday 7:30 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tamiko Bellamy
T.B.
March 6, 2006


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800